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RADNORSHIRE COUNTY COUNCIL.

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# ANNUAL REPORT

OF THE

Medical Officer of Health

FOR THE

... YEAR 1912, ...

BY

LAURENCE W. POLE, M.B., D.P.H.,

COUNTY MEDICAL OFFICER OF HEALTH



RADNORSHIRE COUNTY COUNCIL.

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## PUBLIC HEALTH & HOUSING COMMITTEE :

Chairman : Councillor Dr. RICHARD HARDING.

(*Ex-officio*) Alderman C. C. ROGERS, Chairman, County Council.

„ Councillor JAS. HAMER, Vice-Chairman, County Council.

Councillor J. R. BACHE,

„ T. DAVIES,

„ Capt. J. M. GIBSON-  
WATT,

Councillor The Rev. H. L.

KEWLEY,

„ B. P. LEWIS,

„ C. V. WEALE.

Councillor T. H. HARRIS.

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## DISTRICT MEDICAL OFFICERS OF HEALTH :

<u>NAME.</u>	<u>URBAN DISTRICTS.</u>
T. W. GRAVES, M.R.C.S., L.S.A., Wylcwm Street, Knighton.	KNIGHTON.
H. A. DEBENHAM, M.R.C.S., L.R.C.P., Warden Court, Presteign.	PRESTEIGN.
JOHN MURRAY, M.B., C.M. Hafod Awen, Llandrindod Wells.	LLANDRINDOD WELLS.

	<u>RURAL DISTRICTS</u>
W. W. BALDOCK FRY, M.B., C.M., Tyn-y-Berllan, Builth Wells.	COLWYN.
J. A. K. GRIFFITHS, M.B., M.R.C.S., L.R.C.P., Wylcwm House, Knighton.	KNIGHTON.
RICHARD HARDING, L.R.C.P., L.M., L.F.P.S., The Laurels, New Radnor.	NEW RADNOR.
T. E. HINCKS, M.B., Ch.B., Broad Street, Hay.	PAINSCASTLE.
A. GORDON RICHARDSON, M.B., C.M., Bryncoed, Rhayader.	RHAYADER.

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Clerk to the County Council : H. VAUGHAN VAUGHAN.

Inspector of Midwives : Miss L. CROWTHER, Cardiff.

Inspector under the Sale of Food & Drugs Acts : C. S. W. POWELL.

County Analyst : HERBERT J. EVANS, B.Sc., A.I.C.,  
University College, Aberystwyth.

To the Chairman and Members of the Radnorshire  
County Council.

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MR. CHAIRMAN AND GENTLEMEN,

I beg to present my Second Annual Report, that for the year which ended on 31st December, 1912, on the Public Health administration of the eight urban and rural districts of Radnorshire.

I regret that the issue of this report has been so long delayed but in order that I may be in a position to complete the Report it is necessary that I must be in possession of all the Annual Reports of the District Medical Officers of Health. The last of these for the year 1912 did not reach me until December, 1913. It would be a very great convenience if medical officers would comply with the request of the Local Government Board that their Annual Reports should be completed and issued not later than the 31st March of the year following that to which the Reports relate.

Six of the Reports were printed, two of these being in the form of reprints from a newspaper circulating in the County. The remaining two Reports were typewritten. In this connection I may remark that it is the desire of the Local Government Board that the Annual Reports of Medical Officers of Health should be printed—not typed—and should be bound in uniform size—octavo.

The health of the County generally is satisfactory. The Birth Rate—23.9 per 1,000 of the population—shows little change during the past few years. The Death Rate 12.7 per 1,000, also remains fairly stationary. The Infant mortality rate—84.5 per 1,000 births—remains low in the County.

I beg to draw the attention of your Council to the need for a proper system of sewage disposal for the Urban District of Knighton and for the village of Cwmdauddwr (Rhayader). In both cases crude sewage gains entrance into the adjoining rivers.

The Medical Officer of Health of the Painscastle Rural District in his Report draws attention to the difficulty which would be experienced in finding accommodation for families who might be displaced from houses not fit for habitation. This difficulty no doubt exists in other parts of the County, so that there would be some hesitation on the part of Medical Officers of Health in declaring houses unfit for habitation. In the particular district mentioned the need for proper housing accommodation for the labouring classes would appear to be a real one. In view of the very limited time at my disposal for the investigation of the housing conditions in the County it is impossible for me to give information directly to your Council but it is very desirable that I should be in a position to be able to do so.

I am,

Mr. Chairman and Gentlemen,

Your obedient Servant,

LAURENCE W. POLE, M.B. (Edin), D.P.H.

County Medical Officer of Health.

County Buildings,

Llandrindod Wells,

January, 1914.

## AREA AND POPULATION.

The area and population are set out in Table I.

TABLE I.

Districts.	Area in Statute Acres.	Population.					Estimated by M.O.H's in 1912.
		1901	1911	Increase 1901-1911	Decrease 1901-1911		
Urban (3) ...	8167	5211	5806	595	...		5941
Rural (5) ...	292998	18070	16784	...	1286		16797
Total (8) ...	301165	23281	22590	...	691		22738

The Birth and Death rates are calculated on these estimated populations.

Table II. gives the General Vital Statistics for each district in the Administrative County for 1912.

## BIRTHS.

Table III. shows the birth-rates for every year from 1906 to 1912 inclusive, both for the Administrative County and for England and Wales.

TABLE III.

Districts.	Rates per 1000 of Population.						
	1912	1911	1910	1909	1908	1907	1906
Urban (3) ...	20·7	19·9	18·6	20·8	20·1	21·4	20·9
Rural (5) ...	24·0	23·7	21·4	22·6	23·5	22·9	23·5
County ...	23·9	22·8	20·7	22·1	22·7	22·5	22·9
England & Wales	23·8	24·4	25·1	25·6	26·5	26·3	27·0

The total number of births in the County during the year was 544—123 in the Urban, and 222 in the Rural Districts.



TABLE II.

VITAL STATISTICS.

	Area in Acres.	Population.				Births.		Deaths.			Infant Mortality i.e. Deaths of Infants under one year per 1000 registered births.	Mortality from all causes at subjoined ages.									
		Census 1901.	Census 1911.	1901—1911		Estimated Population in 1912 by Medical Officers of Health.	Nett Registered Births.	Nett Birth-rate per 1000 of Population.	Nett Registered Deaths.	Nett Death-rate per 1000 of Population.		Standardised Death-rate.	Under 1 year.	1 and under 2 years.	2 and under 3 years.	3 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 years and upwards.
				Increase.	Decrease.																
URBAN DISTRICTS.																					
Knighton	3,664	2,139	1,886	...	253	1,886	45	23.9	29	15.4	12.35	66.6	3	1	2	2	...	1	7	13	
Llandrindod Wells	1,509	1,827	2,779	952	...	2,914	57	19.5	26	8.9	10.00	52.6	3	1	1	1	1	6	2	51	
Presteign ...	2,994	1,245	1,141	...	104	1,141	21	18.4	13	11.4	9.06	142.8	3	...	...	...	...	1	4	5	
Total Urban Districts	8,167	5,211	5,806	952	357	5,941	123	20.7	68	11.4	10.55	73.2	9	2	3	3	1	8	13	29	
RURAL DISTRICTS :																					
Colwyn ...	29,579	1,882	2,052	170	...	2,066	47	22.7	20	9.6	8.90	63.8	3	2	1	...	3	...	3	8	
Knighton ...	88,872	4,856	4,443	...	413	4,442	126	28.3	59	13.2	11.32	119.0	15	2	1	...	3	8	6	24	
New Radnor ...	51,893	2,944	2,758	...	186	2,758	69	24.1	33	11.9	9.95	28.9	2	...	...	4	1	3	6	17	
Paincastle ...	31,414	2,339	2,333	...	6	2,333	55	23.5	39	16.7	13.86	109.0	6	1	...	1	2	4	7	18	
Rhayader ...	91,240	6,049	5,198	...	851	5,198	124	23.8	71	13.7	11.04	88.7	11	4	...	...	4	4	10	38	
Total Rural Districts	292,998	18,070	16,784	170.	1,456	16,797	421	24.05	222	13.2	10.9	87.9	37	9	2	5	13	19	32	105	
Administrative County...	301,165	23,281	22,590	1,122	1,813	22,738	544	23.9	290	12.75	10.9	84.5	46	11	5	8	14	27	45	134	



The County birth-rate for 1912 is the highest recorded for the years 1906-1912 inclusive. It is practically the same as that for England and Wales but in this case this is the lowest recorded birth-rate for the country.

TRANSFERABLE BIRTHS.—The Registrar-General has supplied (per the County Medical Officer) to every District Medical Officer of Health the numbers of inward and outward transferable births. The former relate to births of children whose parents usually reside in the County and the latter to births of children whose parents have their usual place of residence outside the County. By this means the nett Birth Rate of each District and of the County is obtained. The number of inward transferable births was five, and the number of outward transferable births was four.

## DEATHS.

TABLE IV.

Districts.	Rates per 1000 of Population.						
	1912	1911	1910	1909	1908	1907	1906
Urban (3) ...	11·4	8·9	14·4	11·6	11·4	14·4	12·1
Rural (5) ...	13·2	13·5	11·9	12·7	14·3	12·7	13·4
County ...	12·7	12·4	12·2	12·2	13·4	13·1	13·0
England & Wales	13·3	14·6	13·5	14·5	14·7	15·0	15·4

Table IV. shows that there has been a slight increase in the County Death Rate during the years 1912 and 1911. The Death Rates for both Urban and Rural Districts show considerable fluctuation but generally the County Death Rates have remained fairly uniform.

The total number of deaths in the County after excluding those of non-residents and including those of residents was 290—68 in the Urban Districts and 222 in the Rural Districts, corresponding to Death Rates per 1,000 of population of 11·4 and 13·2. The Death Rate for the whole County was 12·7 per 1,000.

# Causes of, and Ages at Death during the Year 1912.

TABLE V.

Causes of Death.	Nett Deaths at the subjoined ages of "Residents" whether occurring within or without the district.									
	All Ages.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 & under 25 years.	25 & under 45 years.	45 & under 65 years.	65 and upwards.	
Enteric Fever	...	...	...	...	...	...	...	...	...	
Small Pox	...	...	...	...	...	...	...	...	...	
Measles	...	3	1	2	...	...	...	...	...	
Scarlet Fever	...	2	2	...	...	...	...	...	...	
Whooping Cough	...	8	4	3	1	...	...	...	...	
Diphtheria and Croup	...	...	...	...	...	...	...	...	...	
Influenza	...	6	...	...	...	...	1	1	4	
Erysipelas	...	...	...	...	...	...	...	...	...	
Phthisis (Pulmonary Tuberculosis)	14	...	...	...	...	6	5	1	2	
Tuberculous Meningitis	6	1	1	...	2	...	2	...	...	
Other Tuberculous Diseases...	7	2	1	...	2	...	2	...	...	
Cancer, malignant disease	24	...	...	...	...	...	1	11	12	
Rheumatic Fever	...	1	...	...	...	1	...	...	...	
Meningitis	...	4	...	...	1	1	1	1	...	
Organic Heart Disease	39	...	...	...	...	1	3	6	29	
Bronchitis	...	12	3	...	1	...	...	1	7	
Pneumonia (all forms)	14	3	2	...	...	...	3	3	3	
Other diseases of respiratory organs...	4	...	...	...	1	1	...	...	2	
Diarrhoea and Enteritis	3	2	...	...	...	...	...	...	1	
Appendicitis & Typhlitis	...	...	...	...	...	...	...	...	...	
Cirrhosis of Liver	...	...	...	...	...	...	...	...	...	
Alcoholism	...	1	...	...	...	...	...	1	...	
Nephritis and Bright's Disease...	7	...	...	...	...	...	1	4	2	
Puerperal Fever	...	...	...	...	...	...	...	...	...	
Other accidents and diseases of Pregnancy and Parturition	3	...	...	...	...	...	3	...	...	
Congenital Debility and Malformation, including Premature Birth...	22	21	...	1	...	...	...	...	...	
Violent Deaths, excluding Suicide	...	5	2	1	...	1	...	...	1	
Suicide	...	1	...	...	...	...	1	...	...	
Other Defined Diseases	92	7	...	...	...	3	4	15	63	
Diseases ill-defined or unknown	...	12	1	...	1	1	...	1	8	
	290	46	11	5	8	14	27	45	134	

The causes of, and ages at, death during 1912, are set out in Table V. This table shows that the majority of the deaths occurred at the two extremes of life, nearly half of the deaths being of persons aged 65 years and upwards. Of the stated causes of death the largest numbers were ascribed to Heart Disease (39), Tuberculous Diseases (27), of which 14 were caused by Pulmonary Tuberculosis; Cancer (24); Congenital Debility, &c. (22); Pneumonia (14), and Bronchitis (12).

TRANSFERABLE DEATHS.—By arrangement with the Registrar-General the deaths of all persons registered outside the County whose usual place of residence is in the County, are included in the returns for the County; and deaths of non-residents are similarly excluded from the returns for the County.

FACTORS FOR CORRECTION OF DEATH RATES.—The Registrar-General has supplied factors for the correction of the Death Rates of the Urban and Rural Districts and of the County. The employment of these enables us to compare the Death Rate of one District with another and with that for England and Wales. The correction is necessary because of the difference in the age and sex distribution in rural districts as compared with large centres of population. More old people in proportion to the total population are usually found in country districts than in towns, and the deaths of these raise the Death Rate to a higher point than that of a District where the proportion of old people is less. Generally the correction factors for Rural Districts are less than unity and for towns greater than unity. In only one District in the County—Llandrindod Wells Urban District—is the factor greater than unity.

The crude and standardised death rates for the various Districts and for the administrative County are as follow :—

	Crude.	Standardised.
Urban Districts (3) .....	11.4	10.5
Knighton .....	15.4	12.3
Llandrindod Wells ...	8.9	10.0
Presteign .....	11.4	9.0
Rural Districts (5) .....	13.2	10.7
Colwyn .....	9.6	8.9
Knighton .....	13.2	11.3
New Radnor .....	11.9	9.9
Painscastle .....	16.7	13.8
Rhayader .....	13.7	11.0
Administrative County .....	12.7	10.9

In his Report Dr. Murray (Llandrindod Wells Urban District) says :—

The remarkable feature of the Death Rate has been the advanced age at which the majority of the deaths have occurred. There were only 13 deaths under 45 years of age; between that and 65 there were two; and over 65 there were 11. One death was registered at 95 and another at 87.

Dr. Griffiths (Knighton Rural District) says :—

The Death Rate 13.2 per 1,000 was high for a rural District. A very large proportion of the deaths, however, are those of old persons and infants weakly from birth, and the high Death Rate can hardly be attributed to insanitary conditions.

In the report of Dr. W. W. B. Fry (Colwyn Rural District) it appears that of 20 deaths, six occurred in children up to the age of five years; three between 15 and 25, and the remainder—11—between the ages of 60 and 90.

## INFANT MORTALITY.

The Infant mortality for the County was 84.5 per 1,000 births Table VI. compares the Infant Mortality of the County for the years 1906-1912 inclusive with the rates for England and Wales for the same years. These rates are calculated from the number of deaths of children aged under 1 year per 1,000 registered births.

TABLE VI.

Districts.	Deaths of Children under 1 year per 1000 Registered Births.						
	1912	1911	1910	1909	1908	1907	1906
Urban (3) ...	72.2	68.9	72.0	65.5	60.3	82.6	102.5
Rural (5) ...	87.8	60.2	94.6	77.6	98.0	86.3	98.3
County ...	84.5	62.1	89.6	74.9	90.0	85.5	99.3
England & Wales	95.0	130.0	105.0	109.0	121.0	118.0	133.0

The Infant Mortality for the County in 1912 is greater than that for 1911, but it is below that for England and Wales.

Table VII. shows the nett deaths from stated causes at various ages under one year of age.

From this it appears that 20 out of the total of 46 deaths took place in the case of infants aged under one month, and of these 12 children were under the age of one week. Out of the 20 who died in the first four weeks of life, 16 deaths were ascribed to prematurity of birth, congenital debility, &c. Prematurity of birth is due to a variety of causes including ill-health of the mother, want of proper nourishment before the birth of the child, &c. A certain proportion of the premature births in the country generally is due to disease affecting one or both parents. Expectant mothers should be kept under constant observation in order to detect any conditions which might be likely to cause the birth of premature children. Weakness and debility from birth can usually be ascribed to the same conditions as favour premature birth. If these children are successfully reared they are very often poorly nourished and require greater care than the healthy child.

The lives of some prematurely born children might possibly be saved were skilled assistance obtainable at birth. This leads up to the question of the provision of properly trained midwives throughout the County, and of the employment of Health Visitors. The number of trained midwives at the beginning of the year 1913 was seven out of the total of 27.

It is very satisfactory to note that only two children died from diarrhœal conditions. Four deaths were due to Tuberculous—two of these from Tuberculous Meningitis, and one from Abdominal Tuberculosis.

## ZYMOTIC DISEASES.

SMALL POX.—No case of Small Pox was notified in Radnorshire during the year.

MEASLES.—Three deaths were caused by this disease, one between the ages of 1 and 2 years; and two between the ages of 2 and 5 years. The Death Rate is 0.13 per 1,000.



# INFANT MORTALITY.

1912.—Nett Deaths from stated causes, at various Ages under  
1 Year of Age.

TABLE VII.

CAUSE OF DEATH.	Under 1 week.	1-2 weeks	2-3 weeks	3-4 weeks	Total under 4 weeks.	4 weeks & under 3 months.	3 months & under 6 months.	6 months & under 9 months.	9 months & under 12 months.	Total Deaths under 1 year.
Small-pox ...	...	...	...	...	...	...	...	...	...	...
Chicken-pox ...	...	...	...	...	...	...	...	...	...	...
Measles ...	...	...	...	...	...	...	...	...	...	...
Scarlet fever ...	...	...	...	...	...	...	...	...	...	...
Whooping-Cough ...	...	...	...	...	...	1	1	1	1	4
Diphtheria and Croup ...	...	...	...	...	...	...	...	...	...	...
Erysipe'as ...	...	...	...	...	...	...	...	...	...	...
Tuberculous Meningitis ...	...	...	...	...	...	...	1	...	...	1
Abdominal Tuberculosis ...	...	...	...	...	...	...	...	...	1	1
Other Tuberculosis Diseases ...	...	...	1	...	1	...	...	...	...	1
Meningitis ( <i>not Tuberculous</i> ) ...	...	...	...	...	...	...	1	...	...	1
Convulsions ...	1	1	...	...	2	1	...	1	1	5
Laryngitis ...	...	...	...	...	...	...	...	...	...	...
Bronchitis ...	...	...	...	...	...	...	2	...	1	3
Pneumonia (all forms) ...	...	...	...	1	1	..	1	...	1	3
Diarrhœa ...	...	...	...	...	...	...	...	...	...	...
Enteritis ...	...	...	...	...	...	1	1	...	...	2
Gastritis ...	...	...	...	...	...	...	...	...	...	...
Syphilis ...	...	...	...	...	...	...	...	...	...	...
Rickets ...	...	...	...	...	...	...	...	...	...	...
Suffocation, over-lying ...	...	...	...	...	...	...	...	...	...	...
Injury at birth ...	...	...	...	...	...	...	...	...	...	...
Atelectasis ...	...	...	...	...	...	...	...	...	...	...
Congenital Malformations ...	1	...	...	...	1	1	...	1	...	3
Premature birth ...	8	2	1	...	11	1	...	...	...	12
Atrophy, Debility, and Marasmus ...	2	...	2	...	4	1	1	...	1	7
Other Causes ...	...	...	...	...	...	2	1	...	...	3
Total	12	3	4	1	20	8	9	3	6	46

An extensive outbreak of measles occurred in the Knighton Urban District, the infection having been imported into the town from a District situated outside the County. The Medical Officer of Health comments upon the fact that the symptoms before the appearance of the rash are so like those of an ordinary cold that it is difficult to discriminate. He says :—

It is in general a wise thing for all infectious diseases to be notified, but in the present instance I am doubtful whether or not what would be gained by early notification would justify the increased expense. I think on the whole it would be of equal use if, in case an epidemic seemed probable, your Committee would cause to be issued handbills or placards, pointing out to the parents the danger of neglecting measles. This, I think, would prevent measles being treated too lightly as there is so great a tendency to do.

In controlling and preventing this disease much lies in the hands of the general public, chiefly the mothers of the children. The view generally taken that the disease is a childish complaint through which all must pass is a wrong one, and is fruitful of ill consequences for many of the sufferers.

Measles was very prevalent in the County especially in certain Districts and it became necessary to close five schools.

**WHOOPIING COUGH.**—This disease was very prevalent in the County during the year and eight deaths were attributed to it equal to a Death Rate of 0.35 per 1,000. Four deaths occurred under the age of 12 months; three between 1 and 2 years; and one between 2 and 5 years.

Eight Schools were closed during the year in consequence of outbreaks of this disease.

**SCARLET FEVER (SCARLATINA).**—Two deaths resulted from this disease out of 57 cases notified—equal to a Death Rate of 0.08 per 1,000. The deaths were of children between the ages of 1 and 2 years.

The disease was most prevalent in the Llandrindod Urban District and the Rhayader Rural District, 12 cases being notified in



the former, and 23 in the latter. In neither of these districts were any of the cases removed to the Isolation Hospital.

Dr. H. A. Debenham (Presteign Urban District) says with regard to the two cases notified in his District :—

The other case was imported from a distance while suffering from the disease. This is, of course, illegal and at my request the matter was investigated by the police. The misfortune was due to the certificate notifying the infectious disease being sent in error to the Medical Officer of Health of an adjoining District to that in which the patient lived, and your Council is indebted solely to the courtesy and public spirit of this Medical Officer in writing to me a non-official letter of the facts that I was enabled to recognise the importance of the disease in an early stage, and to adopt means for isolation. So far as I am aware medical practitioners in the county have no precise information or instruction on the boundaries of each sanitary district in their neighbourhood and unavoidable delay in notifying infectious disease is not infrequently caused thereby which may on occasion prove perilous to the community.

Dr. T. W. Graves (Knighton Urban District) reports :—

There was a case of Scarlatina in a child who had been staying away from home in a village in which some cases had occurred. The case was carefully isolated and there was no spread.

Dr. T. E. Hincks (Painscastle Rural District) reports :—

Four cases of Scarlet Fever occurred in February in Llandilo Parish. I immediately visited the houses and inspected the children in school. One suspicious case of peeling was discovered, the School was immediately closed and subsequently thoroughly disinfected, cleansed and the walls distempered. There were no fresh cases.

During School Medical Inspection I found an apparently unrecognised case, and the school had later on to be closed on account of an extensive outbreak among the children. The mild type of the disease which has prevailed for a number of years is no

doubt responsible for some of the spread of the disease as it is not recognised readily.

Two Schools in the County were closed on account of this disease.

DIPHTHERIA.—No deaths were attributed to this disease during the year. Seventeen cases were notified and in no case was School closure required.

Dr. Debenham (Presteign Urban District) reports :—

The diphtheria was imported from a distance by a mild unrecognised case. The disease spread to the other members of this patient's house and of the laundry where the linen was washed before the patient was isolated. This case became what is known as a " chronic carrier " of diphtheria germs and isolation had to be enforced for a period of four months.

Reporting on the Knighton Urban District, Dr. T. W. Graves says :—

The case was taken to the hospital for infectious diseases and all the residents of the house to which the disease was brought were strictly isolated for the necessary period. In the case of one member of this family, who was never ill, the bacillus was present for four weeks. I mention this in order to emphasise the absolute importance of continued bacteriological examinations of swabs from a suspected case until it is pronounced free from the possibility of conveying infection.

In another part of his Report Dr. Graves says :—

While on the subject of infectious disease I wish to mention again the matter of contacts. There is no provision for them. I know it is a difficult matter, and I can only say that it would be much better for the community at large if there existed some means of isolation of suspects other than their own houses, this being admittedly imperfect. Failing a special building I suggest that your Council should arrange to have an immediate right of entry and of occupation of some cottage if occasion should arise.

In his report Dr. T. E. Hincks (Painscastle Rural District) says :—

Arrangements have been made with the Clinical Research Association for the carrying out of certain bacteriological examinations. This is of great advantage to the community at large in that it aids in the early detection of certain infectious and contagious diseases, notably Diphtheria, Typhoid Fever and Pulmonary Tuberculosis.

The Education Committee at my suggestion joined the Clinical Research Association in January, 1912, and the Clerks of the various Urban and Rural District Councils were communicated with suggesting that their councils should also subscribe to the Association so that what the Education Committee proposed doing in the case of school children the District Councils might do with regard to those either under or above school age. So far only the Painscastle Rural District appear to have adopted the measures suggested.

During 1912 22 bacteriological examinations were made by the Clinical Research Association for the Education Committee, all relating to cases of Diphtheria; and in the case of the Painscastle Rural District, three examinations were made of sputa from Tuberculous persons.

**TYPHOID FEVER.**—One case of this disease was notified in the Llandrindod Wells Urban District.

**DIARRHŒA.**—Diarrhœa and Enteritis were responsible for three deaths, two of the cases being children under the age of 12 months. The third was a case aged over 65 years.

The very wet summer was no doubt a factor in bringing about the low Death Rate, but this cannot be the whole reason, as in the previous year the number of deaths was the the same in spite of the prevalence of hot dry weather.

The memorandum of the Local Government Board which was drawn up for the guidance of Medical Officers of Health in the preparation of their reports makes reference to the Board's

General Order of 13th December, 1910, concerning the duties of Medical Officers of Health :—

It (the Report) should also embody the results of enquiries into the “ causes, origin, and distribution of diseases within the District, “ and ” to what extent the same have depended on conditions capable of removal or mitigation.” [Article XIX (2) of the Board’s General Order.]

Dr. H. A. Debenham (Presteign Urban District) has complied with this request and has reported very fully as to the prevalence of Goitre. His remarks are of great interest as research in India on the same subject points very strongly to the possibility of the infection of Goitre being carried by water.

Dr. Debenham says :—

Goitre is a disease which is endemic in the whole neighbourhood, but I believe that in recent years the town itself, as contrasted with the surrounding country, develops very few instances of the disease. Goitre is a disease known to be very prevalent in certain limestone districts, and to be associated with the drinking water of those Districts, and, directly or indirectly (probably indirectly) with the lime salts by chemical or by biological influence. It is a matter in which it is impossible to get statistics in proof, and therefore must rest entirely upon opinions, but my impression with regard to the diminishing prevalence of Goitre in the town is supported by the opinions and experience of the other medical practitioners in your town. One of them says in answer to my enquiry :—“I certainly think that in recent years as far as my experience goes, there have been less cases of Goitre in the town than in the surrounding country district; in fact, I think that the town is comparatively immune.” It may, I think, be taken as a fact that at the present time this difference between the town and surrounding country is very marked. The debatable questions are—(a) Has this difference always existed? And (b) if not, since when did the comparative exemption of the town area commence? My own experience in the county goes back to 27 years, and I am

able to say that 20 years ago the difference was certainly not as marked as at present, even if it existed at all; and to go farther back, I am able to get this evidence, at least, that if any difference existed in these times, it certainly was not recognised. As a corollary to my belief in the diminishing number of cases in the town area in recent years, I suggest that the introduction, in 1904, of the Coldbrook Spring water for drinking purposes is the probable cause of improvement.

## TUBERCULOSIS.

TUBERCULOSIS OF THE LUNGS (CONSUMPTION).—The number of deaths from this cause was 14, equal to a Death Rate of 0.6 per 1,000. Six of the deaths were of persons between the ages of 15 and 25 years, and four between the ages 25 and 45.

TUBERCULOSIS (OTHER FORMS).—This accounted for 11 deaths, giving a Death Rate of 0.4 per 1,000. Five of the deaths were caused by Tuberculous Meningitis.

Taking all Tuberculous diseases together the number of deaths was 25 and the Death Rate 1.0 per 1,000. The total number of cases of Pulmonary Tuberculosis notified during the year was 33—11 from the Urban and 22 from the Rural Districts.

Table VIII. compares the Death Rates for 1912 and 1911.

TABLE VIII.

Tuberculosis.	Deaths and Death-rates.			
	Number.		Death-rate per 1000 Population.	
	1912	1911	1912	1911
Pulmonary ...	14	27	0.6	1.2
Other Forms ...	11	12	0.4	0.5
Total ...	25	37	1.0	1.7

Table VIII. shows that the Death Rate for 1912 from Pulmonary Tuberculosis was just half that for 1911, while the Death Rate from other forms of Tuberculosis was slightly higher in 1911.



The Report of the Medical Officer of the Local Government Board for 1912-13 shows that excepting Cornwall the six Counties having the highest Death Rates, among males, are Welsh Counties. In the case of the Death Rate of females the six counties with the highest rates are also Welsh Counties. Radnorshire stands 7th in the first case and 3rd in the second. In most Counties the male Death Rate is nearly always higher than the female but in Radnorshire the female Death Rate is in excess of the male Death Rate. The Medical Officer of the Local Government Board is of opinion that these differences in the male and female Death Rates call for detailed local enquiry, both as to the possible influence of migration of the sick and healthy, and as to the influence of local sanitary and social conditions.

Under the Regulations issued by the Local Government Board in 1911 it became the duty of every medical practitioner to notify every case of Pulmonary Tuberculosis seen by him, but an Order dated 19th December, 1912, notification was further extended to include all forms of Tuberculosis, and not merely those affecting the lungs. By this Order the Public Health (Tuberculosis) Regulations, 1912, came into force on 1st February, 1913.

Article V. of the Regulations deals with notification by medical practitioners. Every medical practitioner attending or called in to visit any person (whether at an Institution or otherwise) shall within 48 hours after first becoming aware that such person is suffering from Tuberculosis, notify the Medical Officer of Health of the District in which the person resides at the time of notification.

The same notification is required from School Medical Officers except that the notifications have to be transmitted to the Medical Officers of Health weekly.

Article XI. (1) provides for the transmission of notifications incorrectly addressed to a Medical Officer of Health.

The same Article (paragraph 2) makes it the duty of every Medical Officer of Health to enter into a register kept for that purpose the full particulars contained in every notification received by him under the Regulations relating to persons residing in his District. This register must be kept in the custody of the Medical

Officer of Health, shall not be open to inspection by anyone other than to a person specially authorised by resolution of the Local Authority, the Medical Officer of Health for the Administrative County in which the District is situate, a School Medical Officer for an area in which the District is situate, or an officer of any Government Department authorised by that department.

Every notification must be regarded as confidential by the Medical Officer of Health and by every person who is allowed inspection.

Paragraph 3 of the same article provides that the Medical Officer of Health of every District in the Administrative County shall send to the County Medical Officer of Health after the end of each week a statement of every notification received by him during the week relating to a person residing in his District. The statement must show on which Form the notification was made and must contain the information in regard to each person which was given in the notification.

Article XII. directs that upon receipt of the notification the Medical Officer of Health or some officer acting under his instructions shall make such enquiries, and take such steps as are necessary or desirable for investigating the sources of infection, for preventing the spread of infection, and for removing conditions favourable to infection.

#### Special powers and duties of Local Authorities.

Article XIII.—For the purposes of these Regulations  
(1) A Local Authority on the advice of their Medical Officer of Health may supply all such medical or other assistance, and all such facilities and articles as may reasonably be required for the detection of Tuberculosis, for preventing the spread of infection, and for removing conditions favourable to infection, and for that purpose may appoint such officers, do such acts and make such arrangements as may be necessary.

It is provided that a Local Authority shall not take any measures in an institution not belonging to the Authority.



Under this article it would appear that Local Authorities may provide the means for bacteriological examination of sputa not only from persons suffering from the disease, but also from other persons living in the same house with a view to the detection of the disease at an earlier stage than might be otherwise possible. The article also empowers a local authority to provide spitting cups for sputum, disinfection of clothing and disinfection of house, and any other steps which their Medical Officer of Health may advise them to be necessary.

Paragraph 2 of the same Article empowers local authorities to provide and publish or distribute leaflets with information regarding Tuberculosis and the precautions to be taken to prevent the spread of infection.

The Local Government Board in their circular which accompanied the Order under which the Regulations were made, quote paragraph 35 of the Interim Report of the Departmental Committee on Tuberculosis as follows :—

Sanitary authorities are the bodies primarily concerned in the administration of the public health laws of this country, and they must occupy an important position in any general scheme dealing with Tuberculosis. It is they who receive notifications of cases of pulmonary tuberculosis and it is the duty of their Medical Officers of Health on receiving notifications to take such steps as may appear to them to be necessary or desirable for preventing the spread of infection and for removing conditions favourable to infection.

The Local Government Board also remind Sanitary Authorities of their responsibilities under the Public Health and Housing Acts, for the prevention of overcrowding, and for the correction of insanitary conditions which render houses unfit for habitation and favour the spread of Tuberculosis.

Although the Welsh National Memorial has entered into agreement with the County Councils of Wales to provide treatment for persons suffering from Tuberculosis, this does not relieve or absolve Sanitary Authorities from doing what they ought to eradicate Tuberculosis and the conditions that foster its continuance. In the

Circular above referred to the Local Government Board commenting upon Article XIII. of the Regulations lays stress upon the point that the powers of the Sanitary Authority in relation to the prevention of Tuberculosis should be exercised in general co-operation with the Authority responsible for the execution of the scheme of institutional treatment for the locality, and with any other Authorities, public or private, having powers or undertaking duties in connection with the prevention of tuberculosis.

Sanitary authorities can co-operate with the Welsh National Memorial very materially and it is clearly their duty to do so. The Welsh National Memorial undertakes the treatment of persons suffering from Tuberculosis and it is the duty of the Sanitary Authorities to bring to light conditions favouring its continuance. The inspection of premises under the Housing Acts reveals conditions which are more or less inimical to health, *e.g.*, dampness of walls, want of ventilation, insufficient cubic space in living and sleeping rooms, overcrowding, &c.

In regard to the whole question of the prevention and treatment of Tuberculosis it will be at once apparent that, broadly speaking, two authorities are at work, and the work of the one is somewhat independent of that of the other. The public health authorities in Wales are mainly concerned in taking preventive measures for checking the spread of Tuberculosis. Such measures include improvement in housing conditions, prevention of overcrowding, &c. The Welsh National Memorial is concerned in the prevention and treatment of Tuberculosis but prevention in this case has a somewhat difference significance. The Association endeavours to hinder the spread of Consumption by the education of the patient who suffers from this disease so that he may not be a means of infecting others; by discovering in the families of consumptive patients other members who may be suffering from the disease in an early stage hitherto unsuspected; by inculcating upon all and sundry the benefits of fresh air and good food. The measures taken by the public health authorities are, so to speak, general in their application, whereas those of the Welsh National Memorial are focussed more upon the individual and his particular surroundings. It is necessary for success in the eradication of Tuberculosis that

both these authorities should work in close co-operation each assisting the other. Up till the present the amount of co-operation between County Council Officials and those of the Memorial Association has been insignificant. The time has come when your County Medical Officer should be fully informed as to all the work that is done in the County by the Physician appointed by the Memorial Association. In the meantime very little information is in the hands of the County Medical Officer which might be laid before the Public Health Committee and what information there is has very little value. In order to be of any effect the County Medical Officer should receive periodical reports from the Association as to the work done in the County by the officers of the Association—the number of patients under any form of treatment, or under observation, &c., with information regarding each and what progress is being made.

In his remarks upon Tuberculosis Dr. T. W. Graves (Knighton Urban District) says :—

. . . it does not need special knowledge to be able to appreciate the fact that foremost among factors for its prevention are cleanliness of house surroundings and person, and good ventilation of houses, and of equal moment is the education of the patient in those points which tend to prevent the spread of infectious material. Finally, in this and in every other matter of progress, commencement should be made with the children.

Dr. J. A. K. Griffiths (Knighton Rural District), says :—

Eight cases of Phthisis were notified during the year, and four of them were fatal, giving a Phthisis Death Rate of 0.9 per 1,000. I believe the lamentable prevalence of phthisis in the district is due as much to the habits of the people as to any overcrowding or want of good air. One frequently finds cases of consumption in isolated houses on the mountains where there should be no impure air but bedrooms are often low and windows small and sometimes never opened from one year's end to another. But perhaps a more important point is the food question. The children of the working classes are brought up far too much on tea and bread and butter; they rarely have any fresh meat, and milk is often unobtainable. Children, or

adults, living thus have no power of resistance against the tubercle bacillus.

## CANCER.

Twenty-four deaths were caused by Cancer. One death occurred between the ages of 25 and 45; 11 between 45 and 65; and 12 at 65 and upwards. The Death Rate for the County was 1.0 per 1,000; that for 1911 was 0.8 per 1,000.

## CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1912.

TABLE IX.

District.	Diph-theria.	Erysipe-las.	Scarlet Fever.	Enteric Fever.	Pulmon-ary Tub-erculosis.
Urban :					
Knighton ...	1	1	1	...	4
Llandrindod Wells	1	1	12	1	3
Presteign ...	5	1	2	...	4
Total Urban ...	7	3	15	1	11
Rural :					
Colwyn ...	1	...	2	...	8
Knighton ...	2	2	7	...	3
New Radnor ...	1	2	6	...	1
Painscastle ...	1	...	4	...	6
Rhayader ...	5	...	23	...	5
Total Rural ...	10	4	42	...	23
Total County ...	17	7	57	1	34

Table IX. shows the number of cases of Infectious Diseases notified to the Medical Officer of Health of each Urban and Rural District.

## ISOLATION HOSPITAL.

The Hospitals for the Knighton and Presteign Districts are always ready for the reception of patients, and something has been done to remedy the state of affairs that formerly prevailed at the Llandrindod Isolation Hospital.



I am of opinion, however, that the Isolation Hospital accommodation provided for the Llandrindod Urban District is altogether inadequate. In view of the constantly increasing population of the town and its reputation as a health resort it is absolutely necessary that the District Council should take steps to provide for the needs of the District. The Hospital nominally contains three wards, but in practice only two could be utilised for the reception of patients. The cubic space in the three wards varies from about 800 cubic feet to 1,100 cubic feet and the largest is used as a bedroom by the caretaker. The walls are boarded internally and varnished. The floors are bare boards. One ward, the smallest, is heated by an iron stove, brick-lined. Ventilation is provided by casement windows. There is no through ventilation of the wards when the doors are closed. The kitchen is about the same size as the largest ward. No water supply is provided inside the Hospital building, but there is a stand pipe at the rear of the Hospital. No provision is made for washing in the Hospital. There is no sink. The drainage arrangements are inadequate and unsuitable for an isolation hospital; drainage takes place into a field adjoining the Hospital. The space between the Hospital and this field is about six feet. The closet accommodation consists of a separate wooden structure situated about 50 feet to the rear of the Hospital. There is a fixed wooden receptacle for excreta, the capacity of which is about 27 cubic feet, which is cleaned out by the caretaker as often as is necessary, entrance being gained by an opening at the side. There is no adequate space provided for the recreation of patients; the enclosing fence comes close to the building on three sides. This enclosing fence is not sufficient for the purpose. The chimneys do not "draw" properly; in one case this is probably due to the near proximity of trees, and in the other case because the chimney is not high enough. The approaches to the Hospital have not received sufficient attention and because of want of drainage the ground surrounding the Hospital is damp. The District Council have provided some of the necessary equipment for one ward—the smallest. In this is a bedstead with mattress and one pillow, two sheets, three blankets (one of these old), floor rug, two towels and bedroom furniture. The caretaker rents the Hospital from the District Council, paying the Council 2s. per week. She is expected to see that the Hospital is kept ready for the reception of patients. Her remuneration is arranged for by the Medical Officer of Health, who

makes terms with the relatives or friends. During 1913 one case of Scarlet Fever was in the Hospital for 10 weeks, the caretaker receiving 10s. per week, and in 1914 one patient has been admitted suffering from Diphtheria for whom £1 a week was paid. For this remuneration the caretaker undertook the maintenance and nursing of the patients although she has had no nursing or hospital administration experience. Owing to the inadequate provision of bedclothing, &c., the caretaker used some of her own to make up the deficiency. There is no arrangement for the disinfection of the clothing, bedding, &c., except that used for ward disinfection, *i.e.*, sulphur fumigation. No steam disinfecter is available.

The outstanding defects of the Hospital are :—

- i.* It is not large enough for the needs of the District.
- ii.* Hospital administration and provision for nursing are non-existent.
- iii.* The cubic space in the wards is too small. In a Hospital of this design the least amount of space should be 2,000 cubic feet per patient. Floor and wall area are too small.
- iv.* Insufficient means for ventilation.
- v.* Absence of proper water supply and drainage.
- vi.* Insanitary type of closet. This should be connected to the Hospital.
- vii.* Hospital site too small and not properly enclosed.
- viii.* No arrangements made for disinfection of bedding and clothing, and no provision made for washing disinfected clothing.
- ix.* There is no definite arrangement made and authorised by the District Council for the cost of maintenance of the patient.
- x.* Bad state of roadway and approaches to the Hospital.

In conclusion, and in view of the defects enumerated I am of opinion that the present Hospital is entirely unsuitable for use as an Isolation Hospital, and that its use would in no way tend to prevent the spread of infectious disease. It is clearly the duty of the District Council to provide for the requirements of the District in a thorough and adequate manner.

With regard to this the Medical Officer of Health (Dr. Murray) remarks in his Report :—

The question of providing adequate accommodation for infectious diseases has been before the County Medical Officer of Health, but that question is a very thorny one indeed, for though at times we require more accommodation than Oak Cottage provides, still for many months in the year it is not required at all and usually our epidemics have been of such small proportions that isolation has been fairly well carried out in private houses. In addition to this there is the question of who would provide the cost of feeding and nursing patients if they were taken to the Isolation Hospital.

As will be seen from Table IX. the number of notifications for Llandrindod during 1912 was 12 out of the total of 15 for the three Urban Districts and in no case was the Isolation Hospital used in their treatment. The largest number of cases—9—occurred in the third quarter of the year when it would appear to be most desirable that the town should be free from infectious disease. It will also be noticed that in the third quarter Scarlet Fever was most prevalent in the Rhayader District. Between the two Districts there is daily communication by school children who go from Llandrindod Wells to Llanbadarnfawr School about 4 miles from Llandrindod. At this School Scarlet Fever made its appearance and closure was necessary from the end of July till the re-opening after the summer holidays.

Reporting upon Presteign Isolation Hospital, Dr. Debenham says :—

Your Hospital has been used only once during the year for a case of Scarlet Fever where isolation from other children was impossible in the child's home. Patients while in residence at the Hospital are treated by their own medical men, and, whenever possible, the mother or other relative of the patient is allowed also to go into residence to nurse the patient.

The Isolation Hospital for the Knighton Districts was used on one occasion for the isolation of a case of Diphtheria.



Dr. Hincks (Painscastle Rural District) suggests, in reporting to his Council, that they should make arrangements if possible with the Hay Urban District for the admission of cases from certain parts of the Painscastle District where cases would be likely to occur, *e.g.*, Clyro, Llowes and Glasbury, and where their removal might be required.

## DISINFECTION.

I have again to report that no efficient means have been provided for the disinfection of articles which cannot be readily disinfected by disinfectant solution, *e.g.*, mattresses, clothing, &c. It is quite conceivable that such articles may retain infective material for long periods and so be the means of spreading an infectious disease.

## WATER SUPPLY.

Dr. Murray (Llandrindod Wells Urban District) reports that the water supply has been on the whole satisfactory.

No complaint as to the purity of the supply has ever been made but now and again serious complaints are made from houses which are situated very high up that they can only fill their cisterns at night, and through the day are sometimes left without water in the taps off the main.

He further points out that a water supply should not only be pure but should be abundant and with constant service.

Dr. Debenham (Presteign Urban District) gives in detail the water supply of all the houses in his district.

For the town portion of your District there is available an excellent supply of water by the Presteign Water Company's service. The source is the Coldbrook spring situated about  $1\frac{1}{2}$  miles from the town. The supply is sufficient for the needs of the town and the quality good and well suited for domestic purposes. About 140 houses are supplied by this service. 86 houses in the Town are supplied from 61 wells. 23 houses in the town are dependent on the Wellhouse Spring which in summer gives 75 gallons per hour. The spring is of good quality. 11 houses in the town use the spring in Mill Fields. In

the District outside the town, 18 houses are supplied by 18 wells; 19 houses are dependent on various springs; two use water from the River Lugg; three use water from the Clatterbrook.

In the Knighton Rural District the supply is generally from a shallow well or spring. The Medical Officer of Health (Dr. Griffiths) reports that Knucklas Village is still without a proper supply of water, and most of the people get their water from a brook which is obviously liable to pollution by cattle.

New Radnor Rural District. A piped service is only found in the village of New Radnor and water is delivered to stand pipes at various points in the village and to dwelling houses. The supply is constant. Elsewhere the water is obtained from wells. The Medical Officer of Health (Dr. R. Harding) remarks that the water supply is sometimes at such a distance that it becomes a tax upon occupiers.

Dr. W. W. B. Fry (Colwyn Rural District) reports :—

There are only two parts of the District where there is a piped service laid on to the houses, *viz.*, at Builth Road Railway Terrace, and at Llanelwedd, near Builth Wells. The supply at Builth Road is derived from a spring about a mile away. It is of good quality and is supplied by the London and North Western Railway Company to their own cottages. The other supply is from the Builth Wells Urban District Waterworks and is a constant supply of excellent quality. A few houses have their own supply piped from a distance, and also the schools at Cwmbach and Llanelwedd.

Elsewhere the water supply is from springs and wells. Dr. Fry further remarks that the only source of pollution is surface drainage from farmhouse manure heaps which must take place to a certain extent.

Dr. Hincks (Painscastle Rural District) in his report says :—

The villages of Clyro, Painscastle, Llowes and part of Glasbury, are supplied from protected reservoirs, the water being laid on by pipes to most of the houses.

Where this is not done it has been brought within convenient distance of the dwellings. Isolated farm houses and cottages are supplied from spring or well; some few of these are not protected and liable to pollution by stock.

Dr. Richardson (Rhayader Rural District) reports :—

With the exception of Rhayader, Newbridge-on-Wye and Elan Village, which all have a continuous service from reservoirs, the whole of the District depends on pumps and wells chiefly with the exception of some of the better class of houses which have a private continuous supply of their own. As a rule (except in very hot weather) the supply is sufficient and the quality good.

## SEWAGE DISPOSAL.

Dr. Graves (Knighton Urban District) reports :—

In my report for 1911 the matter of the Cwm sewer was mentioned. It was then in process of laying. It has now been finished and all the houses in the Cwm connected to it.

The Medical Officer of Health expresses his great approval of the decision of his Council to require flushing tanks for the closets as he is confident that the closets will be kept in better order than with hand flushing.

Dr. Murray (Llandrindod Wells Urban District) reporting upon the disposal of sewage says :—

The sewage system has been acting admirably although now and again complaints have reached me from people in the neighbourhood of Rhydlynddu and the Rock Park that a disagreeable odour is wafted from the filter beds when the wind is in a particular direction. I understand that it is nearly impossible to prevent this, and it has been of such small importance as almost to be a negligible quantity.

Dr. Debenham (Presteign Urban District) reports :—

The sewers are in excellent condition, and with a sufficient upshaft system of ventilation they are entirely

devoid of any stench nuisance. By means of flushing tanks supplied by the Water Company's service the sewers are regularly and very efficiently flushed. The crude sewage passes to the Sewage Farm at Whitewall, a mile distant from the town, where it is treated by broad irrigation on the land, which has been thoroughly prepared by subsoil drainage. 16 acres of land are available for the purpose, and in practical working the system is most satisfactory for your District, and unattended by public nuisance.

The Medical Officer of Health further remarks that as the sewers were unable to deal with the storm water, under unusual conditions, the rain water from the upper part of the town has been diverted and carried directly into the River Lugg by pipes.

In the Knighton, New Radnor and Painscastle Rural Districts there is no organised system of sewage disposal.

Dr. Fry (Colwyn Rural District) says in his report that there is a small public sewer for the surface water at Howey. For the Railway Cottages at Builth Road, and also for the houses near Builth Wells Station, there is a private drain and cesspool. The two sewers take the sewage from 58 closets.

Dr. Richardson (Rhayader Rural District) reports :—

Drainage and sewerage in the country consist of open drains discharging the sewage on to the land or into manure heaps. In the villages it is carried by pipes and got rid of by irrigation. The village of Cwmduddwr has not yet had a system of sewerage though the same has been advised for many years.

## EXCREMENT DISPOSAL.

EXCREMENT DISPOSAL.—The houses in the Knighton Urban District are generally equipped with water closets which are usually hand-flushed. In the Cwm portion of the town since the provision of the new sewer, flushing tanks are employed.

In Llandrindod Wells Urban District the water closets have flushing tanks.

Dr. Debenham (Presteign Urban District) quotes the remarks he made in his report for 1911 with reference to the number of privies in the more thickly populated portion of the town, and with regard to the contamination of food by flies, he quotes from the Annual Report for 1910-11 of the Medical Officer of Health of the Local Government Board as follows :—

For practical purposes, however, the number of flies in the summer months may be regarded in towns as a valuable index, under present conditions, of the possibilities of contamination of food by pathogenic microbes, or by decomposing organic matter; especially in districts in which privies and pail closets prevail, and in which accumulations of house refuse or stable refuse are permitted.

Dr. Debenham also includes an extract from a Report issued in 1909-1910 of the Medical Officer of the Local Government Board on Infant Mortality as follows :—

The responsibility for a large portion of the total infant mortality, and of mortality from infantile diarrhœa, must be borne by sanitary authorities. Domestic cleanliness has not a fair chance so long as sanitary authorities permit the continuance in closely aggregated towns, and in larger compact villages, of privies or other arrangements for keeping excrement products near the house; so long as they do not carry out scavenging satisfactorily, and so long as they allow streets and yards requiring it to go unpaved.

In my report for 1911 I also laid stress on the danger from contamination of food by flies and the part they played in the dissemination of disease especially among young children.

Dr. Debenham in his report says :—

In the face of such opinions and with all the necessary facilities for the abolition of these privies already in the possession of your Council, is there justification for retaining the existing arrangements? You have already ample sewerage accommodation, an ample water supply, and the statutory powers for conversion in Part III. of the Public Health Act Amendment Act, 1907. But it is essential that the conversion should be to an efficient type:



of w.c., with sufficient water supply and efficient-flushing cisterns. The mongrel device, technically termed a slop closet, and in this town generally dependent upon hand-flushing, is one of the most filthy and insanitary arrangements with which I have to deal. A reasonably sanitary degree of cleanliness in these closets is so entirely dependent upon the personal element of the users (of which there is no guarantee in practice) that I find them perhaps the most impossible of all conveniences for sanitary purposes in your town.

In considering the subject it is necessary to refer again to the water supply. 86 houses are dependent for their supply from 61 wells. Many of these wells suffer severely during the drought of summer and many also are liable to contamination by slops from scullery sinks and the like. All would benefit by a piped service from the Coldbrook Spring, and the whole of the town would benefit from a sanitary standpoint by a water rate and a supply by your Council of piped service to every house in the town. This it seems to me would be a necessary preliminary to the conversion of privies into an efficient water carriage system of excrement disposal.

In the New Radnor and Knighton Rural Districts privies are in general use. In a few houses water closets are present.

In the Colwyn Rural District privies are usual except in those places where a water supply is laid on.

Dr. Hincks (Painscastle Rural District) reports :—

In the majority of farmhouses and cottages the pit privy prevails. Eleven houses were reported to have no privy accommodation at all, and in 17 cases the privies were defective. Many of them are dilapidated and generally they are so constructed that (i) they are inaccessible, or no provision is made for cleansing purposes; (ii) they allow surface water to drain into them and thence to discharge their contents into roadside or other ditches. There is no objection to the privy pit properly constructed, and kept regularly emptied, but in cases where this cannot

be done I strongly advise the substitution of the pail and dry earth system. Sixteen new privies were erected, the bucket and dry earth system being generally adopted. Three pit privies were so converted.

In the Rhayader Rural District privies are general except in the villages where water closets are mostly found.

## RIVERS POLLUTION.

In my Report for last year I drew attention to the sections of the Acts dealing with rivers pollution.

Section 3 of the Rivers Pollution Prevention Act, 1876, makes it an offence against the Act for any person to cause to fall or flow, or to knowingly permit to fall or flow, or be carried into any stream, any solid or liquid sewage matter.

By Section 20 of the same Act a Sanitary Authority may be brought within the operation of this Section.

Section 1 of the Rivers Pollution Prevention Act, 1893, amends Section 3 of the Act of 1876 and reads as follows :—

Where any sewage matter falls or flows or is carried into any stream after passing through or along a channel which is vested in a Sanitary Authority, the Sanitary Authority shall, for the purposes of Section 3 of the Rivers Pollution Prevention Act, 1876, be deemed to knowingly permit the sewage matter so to fall, flow or to be carried.

In my report for 1911 I commented upon the fact that the sewage of the Knighton Urban District passes directly into the River Teme in a crude condition. The bulk of the sewage of Knighton has been considerably added to since the houses in the Cwm District have been connected to the sewers. The brook into which a considerable quantity of the sewage of this District was formerly emptied is now free from pollution to this extent.

The sewage of the Llandrindod Wells Urban District is treated by biological methods before the effluent passes into the River Ithon.



In Presteign Urban District pollution by sewage is prevented by the steps taken to render the sewage effluent innocuous. Biological treatment by means of broad irrigation of the sewage does away with any risk of pollution of the river. The Medical Officer reports that a temporary breakdown in the arrangements for lifting the sewage from the lower portion of the town resulted in overflow of the sewage into the river.

Dr. Richardson (Rhayader Rural District) says there is naturally a certain amount of pollution from sewage being discharged from houses situated on the banks of streams. In villages catchpits are provided to permit solid matters passing into the streams.

For the village of Cwmdauddwr, adjoining Rhayader, there is no system whereby the sewage from a large number of houses is rendered harmless before being passed into the river. In consequence the bank of the river presents a very dirty appearance just below the houses in this village.

Where houses are in the neighbourhood of small streams and brooks there is every likelihood that contamination of the water will result in greater or less degree. In a few of the elementary schools in the County, closets are flushed by the passage of water through them and thence to a neighbouring brook.

## HOUSING.

Section 17 of the Housing, Town Planning, &c., Act, 1909, makes it the duty of every Local Authority to cause to be made from time to time inspection of their District with a view to ascertain whether any dwelling house is in a state so dangerous or injurious to health as to be unfit for human habitation, and every officer of the Local Authority must comply with such regulations and keep such records as may be prescribed by the Board.

Section 17 further makes it the duty of the Local Authority acting on the advice of their Medical Officer of Health to close houses unfit for habitation until they are made fit for this purpose to the satisfaction of the Local Authority (paragraph 2). Appeals against closing orders can only be made to the Local Government Board

(paragraph 3). The Local Authority shall determine any closing order on being satisfied that a house has been made fit for habitation (paragraph 6).

Section 18. After a closing order has been in operation for 3 months the Local Authority must take into consideration the question of demolition of the house (paragraph 1), and if they consider that the house has not been made fit and that no steps are being taken to make it fit, they shall order demolition of the building (paragraph

2). The Local Authority may postpone the operation of this order for demolition for a time, not exceeding six months, to give the owner of the house an opportunity of doing the necessary work (paragraph 3). Notice of appeal must be made to the Local Government Board (paragraph 4).

In pursuance of Section 17 Regulations were issued by the Local Government Board and in my Report for 1911, I gave in detail the conditions which must be reported upon and it is desirable that I should again quote them. The officer who makes the inspection must state the condition of each house in regard to the following matters :—

- (1) The arrangements for preventing the contamination of the water supply.
- (2) Closet accommodation.
- (3) Drainage.
- (4) The condition of the dwelling house in regard to light, the free circulation of air, dampness and cleanliness.
- (5) The paving, drainage and sanitary condition of any yards or outhouses belonging to or occupied with the dwelling house.
- (6) The arrangements for the disposal of refuse and ashes.
- (7) The existence of any room which would, in pursuance of Subsection (7) of Section 17 of the Act of 1909, be a dwelling house so dangerous or injurious to health as to be unfit for human habitation. (Refers to underground sleeping rooms).
- (8) Any defects in other matters which may tend to render the dwelling house dangerous or injurious to the health of an inhabitant.

The Regulations further prescribe that records of the inspections must be kept and at each of their ordinary meetings the Local Authority must take these records into consideration, and give all directions and take all such action within their power as may be necessary.

The Medical Officer of Health of every district is required by Article V. of the Regulations, to include in his Annual Report information and particulars in tabular form in regard to

- (1) The number of dwelling houses inspected under and for the purposes of Section 17 of the Act of 1909.
- (2) The number of dwelling houses which on inspection were considered to be in a state so dangerous or injurious to health as to be unfit for habitation.
- (3) The number of representations made to the Local Authority with a view to the making of closing orders.
- (4) The number of Closing Orders made.
- (5) The number of dwelling houses the defects in which were remedied without the making of Closing Orders.
- (6) The number of dwelling houses which after the making of Closing Orders were put into a fit state for human habitation.

Dr. Murray (Llandrindod Wells Urban District) reports as follows :—

There have been a few minor complaints with regard to defective sanitation, but these have all been put right as soon as they have been pointed out.

Dr. Debenham (Presteign Urban District) supplies the following statement :—

Number of houses inspected .....	114
Number considered unfit for human habitation .....	1
Number of representations made to Local Authority with a view to making Closing Orders .....	1
Number of Closing Orders made (one under consideration) .....	Nil

Number of houses where defects were remedied without making Closing Orders .....	8
Number of houses made fit after making Closing Orders .....	0

The general character of the defects found to exist were bad ventilation, windows not made to open, defective plastering, leaking roofs and paper loose from walls.

Dr. T. W. Graves (Knighton Urban District) reports :—

Under this Act the inspections. . . have been carried out, and reports have from time to time been laid before your Committee. The main defects found were due to dampness (owing to houses being “ built-in ”), to defective troughing, to poor ventilation, and to ill-lighted rooms. Where structural alterations in respect of these matters were necessary they were made—windows were made to open, in “ built-in ” houses a sufficient depth and width of soil was removed and troughing was made good.

Two houses were condemned as unfit for habitation, and one bakehouse was condemned until re-built; it is however, no longer in use.

Dr. J. A. K. Griffiths (Knighton Rural District) reports that under the Act 120 houses were inspected by the Inspector. No houses were thought to be unfit for habitation and no Closing Orders were made. In fifteen cases defects were remedied without making Closing Orders and sixteen cases are still under consideration.

The defects most commonly found were dampness and defects of water supply.

Dr. Harding (New Radnor Rural District) reports :—

The character of the dwelling-houses is that of most remote rural areas. Every cottage, practically, has its garden and many have small plots of pasture land in close proximity. The type is not a modern one, but structurally these cottages are mostly sound and the air space is generally sufficient. It would not be correct to say that there is an insufficiency of small houses for workpeople,

for, though one may see, here and there, dilapidated remains of cottages, one knows that with the great increase in the acreage laid down to permanent pasture, constant labour is not now in such demand as it used to be.

The Medical Officer of Health gives the following statement of house inspections :—

Number of houses inspected .....	33
Number unfit for habitation .....	1
Number of representations made to Local Authority with a view to the making of Closing Orders .....	1
Number of Closing Orders made .....	1
Number of houses made fit without making Closing Orders .....	7
Number made fit after making Closing Orders .....	0

Dr. W. W. B. Fry (Colwyn Rural District) reports :—

As stated in my report of last year the houses provided by the London and North-Western Railway for their workmen are model ones and are kept in a most satisfactory condition. This collection of houses is by far the largest in the District and accounts for a large proportion of the working class. There are excellent cottages near Builth. There does not appear to be any demand for additional house accommodation except in the neighbourhood of Llandrindod Wells. It is not so much among the labourers' cottages where defects are to be found as amongst the smaller farmhouses. No cases of overcrowding have been reported. Five new houses have been erected in Llandrindod parish. Under the Housing Regulations the Inspector of Nuisances has visited several houses with the result as given in the accompanying table. He has in former years made an inspection of most of the houses in the District.

Number of houses inspected .....	15
Number unfit for habitation .....	—
Number of representations made to Local Authority with a view to the making of Closing Orders .....	—



Number of Closing Orders made .....	—
Number of houses made fit without making Closing Orders .....	3

Dr. T. E. Hincks (Painscastle Rural District) in his report says :—

This (housing) comprises mainly farmhouses and dwellings for the working classes. The records of the Sanitary Inspector under the Housing Acts show that many of these are of an unsatisfactory character. The *chief defects* are dampness, an unsatisfactory state of yards or adjacent buildings; several cases of insufficient ventilation and defective roofing were dealt with. The chief causes of the dampness are—(a) many of the houses were originally built on rising ground against a bank of earth, and no steps were taken to drain the surface water at the back of the house; (b) total absence of damp-proof courses; (c) the absence of, or defective guttering and troughing below the eaves. In many cases this dampness could be dealt with by the removal of the soil at the back of the house and the provision of suitable surface water drainage. Several houses are getting into a state of dilapidation which renders them barely fit for habitation. It must be remembered that most of the houses in the District were built in the days when modern sanitation was unknown, and without reconstruction it would be impossible to bring them up to the standard of present day requirements. At the same time no new houses are being built and there seems no inclination on the part of landlords to build them. However, I cannot see my way to advise your Council to make Closing Orders except in the worst cases. Pressure has been and will be brought to bear upon the owners to make what improvements can reasonably be expected. One case of overcrowding has been dealt with.

Number of houses inspected .....	172
Number of houses unfit for habitation ...	2
Number of representations made with a view to making Closing Orders ...	2
Number of Closing Orders made .....	1

Number of houses made fit without the making of Closing Orders .....	24
Number of houses made fit after the making of Closing Orders .....	1

Up to the present time 419 dwellings have been inspected under the Housing Acts. It would be impossible to deal straightaway with all the defects discovered, and I would thoroughly concur with the action your Council is talking of finding out by these inspections the dwellings which are most in need of attention, and then dealing with them as opportunity arises.

Dr. Richardson (Rhayader Rural District) says :—

Housing accommodation is ample and there are a large number of empty houses in the District.

### SCAVENGING.

In Knighton Urban District house refuse is removed by the Council's cart. The Medical Officer of Health advocates the holding of fairs outside the town. He says in his Report :—

I should much like the Council to discuss the question of the condition of the streets during the fairs. If it happens to be a wet day the state of the streets is indescribable. If it is dry, dust is blown into the shops and houses, into people's eyes, noses and mouths, spreading any and every air-borne disease with it. I know that everything is being done in the way of cleansing that can be done but that is only treating the effect and not the cause, and it would be infinitely better if the fairs could be held in some field, or, at any rate, not in the centre of the town.

With regard to these remarks I am in full agreement. The holding of these fairs, and especially the more important ones, in the narrow streets of Knighton, is not a commendable practice. It is practically impossible to thoroughly and adequately clean the streets by such flushing as is practised and in hot weather there must undoubtedly be some difficulty in obtaining a sufficient supply of water for this purpose as the capacity of the town's reservoir is not too large for the needs of the town. If the market fairs were held

in a field outside the town the opportunities for fouling of the streets would be fewer and no hardship would be placed upon farmers and traders. Apart from the public health question there is the one of public safety in narrow congested streets.

Dr. Murray (Llandrindod Wells Urban District) reports as follows :—

This (removal and destruction of house refuse) has been carried on in a regular systematic manner. The only item which calls for comment is that during the season complaints are made now and then as to the untidiness of our streets.

Dr. Debenham (Presteign Urban District) says :—

The scavenging of streets and public places by your Council's staff has been satisfactorily performed and house refuse is removed twice weekly by your Council's carts. As in former years I still urge that this should be done earlier in the day before the shops are opened in order to avoid the risk of contamination of food stuffs by the dust which is pregnant with disease-giving germs; and in the heat of summer when germ life is most active this dust might well be the source of a serious epidemic by the poison supplied direct from the refuse without even the intervention of the wicked fly. It has been my endeavour to keep down collections of manurial refuse and to remove stagnant puddles of liquid filth but so long as pigstyes and fowl-runs are permitted in the town area so long will there be perpetual difficulty in sanitation. Where disease of an infective character arises "*de novo*" as it is termed I believe that these manurial collections from animals are the responsible source, and fowl-runs in particular, of sporadic diphtheria.

In the rural districts there is no organised system of scavenging. This is attended to by the occupiers of the houses, and the adjacent garden or land are utilised for its disposal.

### SLAUGHTER HOUSES.

The slaughter houses in the Knighton Urban District are regularly inspected and no defects have been found.

Dr. Debenham (Presteign Urban District) reports that there are **four** slaughter houses on the Register. Three are drained to the sewer. One has its water supply from the Presteign Water Company and two by pumps from wells. The fourth, that of a horse slaughterer is situated about a mile from the town. No drains are laid on and no water supply is on the premises. With regard to these premises the Medical Officer of Health says :—

If this objectionable trade is allowed to continue properly constructed drainage and a water supply must be installed, but in view of the report of your Inspector of Nuisances, I strongly advise the prohibition of this trade in your District.

There are no slaughter houses in the Knighton Rural District. There is one in the New Radnor Rural District which is only occasionally used and no bye-laws are in force.

Dr. W. W. B. Fry (Colwyn Rural District) reporting, says :—

At the end of the year there were two licensed slaughter houses in the District. These are kept fairly clean. One has recently been re-floored with cement and the other has only just been constructed. In neither is there water laid on, but the number of animals killed is small so that the places can be kept clean by hand. There is no systematic inspection of meat.

There are two slaughter houses in Painscastle Rural District which are regularly inspected.

## DAIRIES AND COWSHEDS.

In the Knighton Urban District the dairies are regularly inspected and no defects have been found.

Dr. Murray (Llandrindod Wells Urban District) says :—

As in previous years the necessity for a pure milk supply has been brought before your notice and insisted upon. The question of the milk supply in its relation to tuberculosis has become so very acute that all dairy farmers should be compelled to have their cows submitted to a tuberculin test and rid the herds of all animals that

show any reaction. In this way we could ensure a milk supply free from tubercle, and we should then deal with that great scourge in one of its most prevalent forms.

Dr. Debenham (Presteign Urban District) reports :—

There are eight dairies on the Register. They are periodically inspected and no defects have been reported. A veterinary inspection of all cows is made periodically—four inspections during 1912. No tuberculous disease of the udders was detected.

The Medical Officer of Health gives details with regard to the sanitary condition, water supply, and drainage of the dairies and cowsheds. In all cases these appear to be satisfactory. The water supply is either obtained from the Presteign Water Company or from a well. One cowshed was ordered to be cleansed, white-washed and drained by an open channel to the yard.

The Medical Officer of Health (Knighton Rural District) reports that there are only three milk sellers on the Register and all the milk is sold outside the District. He states that is often impossible to obtain new milk in cases of illness.

No dairies are registered in the New Radnor District. Milk is rarely actually sold and the animals are healthy and well kept in the very few places where it is sold.

There are nine registered dairies in Colwyn Rural District which are inspected once a month. They are reported to be kept in a satisfactory condition. The cowsheds are well-ventilated and sufficiently spacious as the cows are almost constantly kept out.

The Medical Officer of Health (Painscastle Rural District) considers that more attention should be paid to the necessity for the proper construction and maintenance of cowsheds, and the cleansing of the hands of milkers and of milking utensils. He advocates a wider circulation of a pamphlet of the Board of Agriculture dealing with this matter. Two dairies are registered in the district. The cowsheds and adjoining premises were found in an unsanitary condition but the defects were remedied after being pointed out to the owners and later inspection showed the premises to be satisfactory.



## MIDWIVES ACT.

The number of certified midwives on the Register at the beginning of 1912 was 29 as against 34 in 1911. Of the 29 midwives only five had received training. By the end of the year the number had decreased to 26—five of whom were trained.

The number of Midwives aged over 70 and in receipt of the old-age pension was three. One of these died during the year. The number of midwives aged over 60 was 12. Illiterate midwives number 14.

The number of regular inspections by the Inspector of Midwives (Miss Crowther) was 52. Special visits were made on three occasions.

The number of births attended by certified midwives was 235. The number of still births attended was 5.

The number of deaths occurring in the practice of certified midwives was

Mothers	.....	0
Infants	.....	5

The causes of death of the latter were prematurity of birth, debility and heart weakness.

The need for the provision of properly trained midwives for this County is a matter of the greatest importance. Out of the whole number of midwives practising, 12, or nearly half, were over the age of 60 years, and at end of the year two of these were in receipt of the old-age pension. It cannot be expected that elderly women can have the energy or strength to go at a moment's notice the long distances, often without any road, that separate them from women who may require them, and therefore it is inevitable that a considerable number of women must be attended by neighbours with little or no experience of the risks involved in childbirth. During the year 1912 the nett number of births registered was 544. Of these, 235 were attended by certified midwives, leaving a balance of 309 births for which there is no information as to whom they were attended by. With the adoption of the Notification of Births Act we should be in possession of all the information concerning the births in the County, as by the provisions of the Act it is necessary that births must be notified within 36 hours of their occurrence.

## FACTORIES AND WORKSHOPS ACTS.

In all the Districts regular inspections have been made under these Acts. In the Knighton Urban District a bakehouse was condemned and its use was discontinued.

## SALE OF FOOD AND DRUGS ACTS.

The administration of these Acts is in the hands of the Inspector (Mr. C. S. W. Powell) appointed for the purpose. The following table shows the number of samples taken during 1912, and the condition of these as reported by the County Analyst.

Sample.	Number taken.		Number Genuine.	Number not Genuine
	Formal.	Informal.		
*Butter ... ..	8	2	7	3
Cheese ... ..	6	1	7	
†Milk (new) ... ..	27	3	27	3
„ (condensed) ... ..	2	...	2	
Margarine ... ..	1	...	1	
Lard ... ..	1	...	1	
Bread ... ..	1	3	4	
Flour (wheat) ... ..		...	1	
„ (self-raising) ... ..		..	2	
Baking Powder ... ..	2	...	2	
Cream of Tartar .. ...	1	...	1	
Ground Rice ... ..	1	...	1	
Custard Powder ... ..	1	...	1	
Coffee ... ..	1	1	2	
Cocoa ... ..	5	3	8	
Tea ... ..	2	2	4	
Sugar (Demerara) ... ..	1	1	2	
Syrup ... ..	1	...	1	
Table Jelly ... ..	1	...	1	
Marmalade ... ..	1	...	1	
Sulphur ... ..	1	...	1	
Pepper ... ..	1	1	2	
+Bloater Paste ... ..	1	...	...	1
+Veal and Ham Paste ... ..	1	...	...	1
+Chicken and Ham Paste ... ..	...	1	1	...
+Tinned Salmon ... ..	1	...	...	1
+Sardines ... ..	1	...	...	1
Whisky ... ..	2	4	6	
Gin ... ..	...	1	1	
Peas ... ..	1	...	1	
Magnesia ... ..	1	...	1	
Health Salts ... ..	1	...	1	
Sweetmeats ... ..	...	2	2	

\* Three of the Butter samples contained Boric Acid but not in excess of the legal limit. These three were foreign butters. Two samples, one taken formally and the other informally, were 100 per cent. adulterated and coloured to resemble butter. In this case prosecution followed and a fine of 5s. (costs 7s. 6d.) was imposed upon the dealer who supplied the "butter" to the retailer. One sample contained water in excess of the legal limit.

† Two samples of milk were slightly below standard and the vendors were cautioned. One sample was in a very dirty condition and contained a large quantity of organic matter. One sample contained an excess of water but the percentage of fat was high—4.2 per cent.

‡ The two canned meats, and the tinned salmon and tinned sardines contained small quantities of tin. In the opinion of the Analyst the quantities found were not detrimental to public health.

## PUBLIC HEALTH (MILK & CREAM) REGULATIONS, 1912.

On 1st August, 1912, the Local Government Board under the powers given to them under Section 1 of the Public Health (Regulations as to Food) Act, 1907, issued the Public Health (Milk and Cream) Regulations, 1912.

### Part I.

Article I. defines "preservative substance" to mean any substance preparation or solution which when added to milk or cream is capable of retarding the onset of sourness or decomposition, or is capable of neutralising acidity (sourness) in milk or cream; and defines "thickening substance" to mean sucrate of lime, gelatine, starch paste, or any other substance, which added to cream is capable of increasing its thickness: and provides that neither cane nor beet sugar shall be regarded as a preservative or as a thickening substance.

The expression "milk" includes separated, skimmed, condensed and dried milk.

The expression "cream" means that portion of the milk fat which has risen to the surface, or which may be removed by the separation process.

The expression "preserved cream" means cream containing 35 per cent. or more by weight of milk fat to which has been added (1) Boric Acid, Borax, or a mixture of these, or (2) Hydrogen Peroxide.

The Regulations with the exception of sub-division (1) of Article V. came into operation on 1st October, 1912.

## Part II.

- Article III. (1) No person shall add, or order or permit any other person to add any preservative substance to milk intended for sale for human consumption.
- (2) No person shall sell, or expose or offer for sale, or have in his possession for the purpose of sale, any milk to which any preservative substance has been added in contravention of the provisions of Sub-division (1) of this Article.
- Article IV. (1) No person shall add, or order or permit any other person to add
- (a) any thickening substance to cream or preserved cream;
- (b) any preservative substance to cream containing less than 35 per cent. by weight of milk fat;
- (c) to cream containing 35 per cent. or more by weight of milk fat any preservative substances other than (i) Boric Acid, Borax, or a mixture of these preservative substances; or (ii) Hydrogen Peroxide, in any case in which the cream is intended for sale for human consumption.
- (2) No person shall sell, or expose or offer for sale, or have in his possession for the purpose of sale, any cream to which any thickening substance or any preserving substance has been added in contravention of the provisions of Sub-division (1) of this Article.
- Article V. (1) Provides that sellers of preserved cream, shall in their price lists, &c., describe that article as preserved cream. No words must be used in the description which might imply that it is preserved cream to which no preservative has been added.

This provision came into force on 1st January, 1913.

- (2) Every receptacle containing preserved cream intended for human consumption must be labelled in the manner prescribed in the Schedule to the Regulations.

Special provisions applying to public refreshment rooms, &c., are detailed for the protection of customers.

Article VI.—Provides that the Local Authority charged with the administration of the Sale of Food and Drugs Acts shall enforce and execute these Regulations (with the exception of Part III. relating to the importation of milk and cream into England and Wales).

It is further provided that the Local Authority before instituting proceedings against any person shall afford him an opportunity of furnishing an explanation in writing or otherwise as they may appoint, and shall consider any such explanation and all the circumstances of the case.

Article VII.—Provides that the Officers appointed by the Local Authority for carrying out the provisions of the Sale of Food and Drugs Acts, may under the direction of the Local Authority, procure for examination samples of milk or cream, or of any article resembling milk or cream, or of any substance which appears to be intended for addition to milk. The owner or occupier is required to give all reasonable facilities for any purpose of the Regulations.

#### Part IV.

Article X.—(1) Provides that if a difference arises in relation to any subject matter of, or to any thing done under these Regulations, the difference may, on the application of all the parties affected be referred to the Local Government Board for determination.

(2) Provides that it shall be at the option of the Local Government Board to determine any such difference as arbitrators or otherwise.

(3) Provides that where the Local Government Board elect to determine any such difference otherwise than as arbitrators they may by Order determine the difference and such determination shall be final and conclusive.

(4) Every Order so made shall have effect as if the Order were enacted in the Regulations.

From these Regulations it will be seen that it is now unlawful to add any preservative substance to milk, or to sell milk to which any preservative has been added. For many years disputes have arisen in consequence of the finding of Boric Acid or similar substance in milk. The question has frequently been raised as to whether or not its presence was probably injurious to those who are the greatest consumers, *i.e.*, young children and invalids. In the



future this point will no longer arise. The use of thickening substances in any cream is entirely prohibited and preservatives may not be added to cream containing less than 35 per cent. by weight of milk fat. It is forbidden to use for preservative purposes any other substances than Boric Acid, Borax, or a mixture of these; and Hydrogen Peroxide. Cane and beet sugar are specially exempted and may be used both for thickening and preservative purposes. Formaldehyde has sometimes been used but this is altogether prohibited. It is important to note that the Inspector appointed to carry out the provisions of the Sale of Food and Drugs Acts can only take samples under these Regulations after being authorised by the Local Authority (County Council) to do so (Article VII.).

The Regulations do not prescribe the amounts of the preservative substances which are permitted but Dr. J. M. Hamill one of the Medical Officers of the Local Government Board in his Report to the Board on the use of Preservatives in Food (Food Reports No. 10—New Series No. 13) issued on 11th August, 1909, says :—

In the case of Boracised Cream the maximum amount of Boron preservative, calculated as Boric Acid ( $H^3BO^3$ ) should be 0.4 per cent. from May to October inclusive, and 0.25 per cent. during the remainder of the year.

He also gives it as his opinion that the only preservative to be used in cream should be one of the above substances but he qualifies this by saying that :—

An exception might, however, be made in respect of the use of Hydrogen Peroxide, the addition of which to cream might be permitted provided that only traces were allowed to remain in the cream.

The Medical Officer of Health of the Local Authority is required by the Local Government Board to prepare a report, at the end of each year, giving particulars of the work done under the Regulations.



